REMARKS

In light of the amendments to the application noted above and remarks to follow,

reconsideration and allowance of the above-referenced application are respectfully requested.

Claims 1-38 are pending. Claims 1-14 are the original patent claims and stand

unamended. Claims 15-38 are previously added claims. Claims 15, 19, 23, 27, 30, 33 and 36 are

amended herein. Claims 16-18, 20-22, 24-26, 28, 29, 31, 32, 34, 35, 37 and 38 stand

unamended.

At paragraph 2 of the Final Office Action, the Examiner rejected claims 15-18 and 23-26

under 35 U.S.C. 112, first paragraph as failing to comply with the written description

requirement. Applicant has removed the language objected to by the Examiner from the

independent claims (i.e., Claims 15 and 23), and therefore requests that the rejection of these

claims under 35 U.S.C. 112, first paragraph be withdrawn.

At paragraph 4 of the Final Office Action, the Examiner rejected claims 15, 17, 19, 21,

22, 33, 35, 36 and 38 under 35 U.S.C. §103(a) as being unpatentable over Kanno et al. (U.S.

Patent No. 5,229,868) in view of Matsumura (U.S. Patent No. 5,148,499). Applicant disagrees.

Each of the rejected pending independent claims recites in a somewhat similar manner

that a bit number of said pixel data of said first digital image signal being reduced. By reducing

the bit number of pixel data of the first digital image signal, the number of classes can be

reduced and, therefore, the size of the memory can be reduced (Column 3, line 65 to column 4,

line 11 of U.S. Patent No. 5,517,588, the patent for which the present reissue application has

been filed). Therefore, Applicant respectfully submits that neither Kanno nor Matsumura, taken

alone or in combination, teach or suggest this feature. Applicant respectfully requests that the rejection of independent claims 15, 19, 33 and 36 under 35 U.S.C. §103(a) be withdrawn.

Furthermore, dependent claims 17, 21, 22, 35 and 38 depend, either directly or indirectly, from one of independent claims 15, 19, 33 or 36, and are therefore allowable as depending from allowable independent base claims. Additionally, each of these claims presents an independently patentable combination in and of its own right, and is therefore patentable for this additional reason. Applicant therefore similarly submits that the rejection of claims 17, 21, 22, 35 and 38 under 35 U.S.C. §103(a) be withdrawn.

At paragraph 5 of the Final Office Action, the Examiner rejected claims 18, 23, 25-27, 30 and 32 under 35 U.S.C. §103(a) as being unpatentable over Kanno et al. and Matsumura, and further in view of Collins (U.S. Patent No. 4,587,556). Applicant respectfully disagrees.

Independent claims 23, 27 and 30 include limitations similar to those noted above with respect to independent claims 15, 19, 33 and 36. Because Collins fails to cure the defects of Kanno et al. and Matsumura noted above, Applicant submits that independent claims 23, 27 and 30 are allowable over the combination of references relied upon by the Examiner, and therefore respectfully requests that the rejection of claims 23, 27 and 30 under 35 U.S.C. §103(a) be withdrawn.

Furthermore, claims 18, 25, 26 and 32 depend, either directly or indirectly from an independent allowable claim, and are therefore allowable as depending from an allowable independent base claim. Additionally, each of these claims depicts an independently patentable combination in and of its own right. For these reasons, Applicant respectfully requests that the rejection of claims 18, 25, 26, and 32 under 35 U.S.C. §103(a) be withdrawn.

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At paragraph 6 of the Final Office Action, the Examiner rejected claims 16, 20, 34 and 37 under 35 U.S.C. §103(a) as being unpatentable over Kanno et al. and Matsumura and further in view of Tararine et al. (U.S. Patent No. 5,048,102). Applicant respectfully disagrees.

Claims 16, 20, 34 and 37 each depend from one of the independent claims noted above, and therefore are allowable as depending from allowable independent base claims. Additionally, because Tararine et al. fails to cure the defects noted above with respect to Kanno et al. and Matsumura, Applicant submits that each of these claims also presents an independently patentable combination in and of its own right. Applicant therefore respectfully requests that the rejection of claims 16, 20, 34 and 37 under 35 U.S.C. §103(a) be withdrawn.

At paragraph 7 of the Final Office Action, the Examiner rejected claims 24, 28, 29 and 31 under 35 U.S.C. §103(a) as being unpatentable over Kanno et al., Matsumura and Collins as applied to claim 23, and further in view of Tararine et al. Applicant respectfully disagrees.

Claims 24, 28, 29 and 31 each depend from one of the independent claims noted above, and are therefore allowable as depending from allowable independent base claims. Additionally, because Tararine et al. fails to cure the defects noted above with respect to Kanno et al., Matsumura and Collins, Applicant submits that each of these claims presents an independently patentable combination in its own right. Applicant therefore respectfully requests that the rejection of claims 24, 28, 29 and 31 under 35 U.S.C. §103(a) be withdrawn.

Applicant notes with appreciation the notice that claims 1-14 are allowable over the prior art of record. To the extent the Examiner's stated reasons for allowability imply or are construed to mean that the claims are allowable over the prior art of record because the Examiner believes the claims should be interpreted to include one or more features or limitations not recited therein, Applicant's attorney disagrees with such an interpretation. It is the intent of Applicant, by his

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attorney, to construe the allowed claims so as to cover the invention disclosed in the instant

application and all equivalents to which the claimed invention is entitled.

Applicant submits that this amendment does not require further search or consideration

and respectfully requests entry of the amendment. In view of the foregoing amendments and

remarks, it is believed that all of the claims in this application are patentable over the applied

references, and early and favorable consideration thereof is solicited.

Please charge any fees incurred by reason of this response and not paid herewith to

Deposit Account No. 50-0320.

Respectfully submitted,

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Claims 15, 19, 23, 27, 30, 33 and 36 have been amended as follows:

15. (Six Times Amended) ~~Digital~~ A digital signal conversion apparatus for converting a

first digital image signal to a second digital image signal having a ~~quality higher than that of the~~

~~first digital image signal~~ high resolution component, comprising:

a memory for storing class data for respective classes at addresses corresponding to said

respective classes, said class data obtained by learning with at least a training digital image

signal having ~~a quality higher than that of the first digital image signal~~ said high resolution

component;

means for receiving said first digital image signal including pixel data representing pixel

values;

means for clustering a plurality of pixel data of said first digital image signal adjacent to a

pixel data of said second digital image signal to produce a class, a bit number of said pixel data

of said first digital image signal being reduced;

means for retrieving said class data from one of said addresses of said memory

corresponding to said class of said first digital image signal; and

means for generating all of pixel data, representing pixel values of said second digital

image signal, in the same manner in accordance with a common algorithm based upon at least

said retrieved class data.

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19. (Six Times Amended) A digital signal data conversion method for converting a first digital image signal to a second digital image signal having a high resolution component, comprising the steps of:

storing class data for respective classes at addresses in a memory corresponding to said respective classes, said class data obtained by learning with at least a training digital image signal having said high resolution component;

receiving said first digital image signal including pixel data representing pixel values;

clustering a plurality of pixel data of said first digital image signal adjacent to a pixel data of said second digital image signal to produce a class, a bit number of said pixel data of said first digital image signal being reduced;

retrieving said class data from one of said addresses of said memory corresponding to said class of said first digital video signal; and

generating all of pixel data, representing pixel values of said second digital image signal, in the same manner in accordance with a common algorithm based upon at least said retrieved class data.

23. (Six Times Amended) ~~Digital~~ A digital signal conversion apparatus for converting a digital video signal admitting of a first standard into a digital video signal admitting of a second standard, a first ~~quality~~ resolution of said digital video signal admitting of said first standard being lower than a second ~~quality~~ resolution of said digital video signal admitting of said second standard, comprising:

a memory for storing class data for respective classes at addresses corresponding to said respective classes, said class data obtained by learning with at least a training digital video signal

admitting of said second standard having said second ~~quality~~ <u>resolution</u>;

means for receiving an input digital video signal including pixel data and admitting of said first standard;

means for clustering a plurality of pixel data of said input digital video signal adjacent to a pixel data of a ~~second~~ digital video signal <u>admitting of said second standard</u> to produce a class, <u>a bit number of said pixel data of said input digital video signal being reduced</u>;

means for retrieving said class data from one of said addresses of said memory corresponding to said class of said input digital video signal admitting of said first standard; and

means for generating all of pixel data, representing pixel values of said digital video signal admitting of said second standard, in the same manner in accordance with a common algorithm based upon at least said class data which has been retrieved.

27. (Six Times Amended) ~~Digital~~ <u>A digital</u> signal conversion apparatus for converting a standard definition digital video signal to a high definition digital video signal, comprising:

a memory for storing class data for respective classes at addresses corresponding to said respective classes, said class data obtained by learning with at least a training high definition video signal;

means for receiving a standard definition digital video signal having pixel data representing pixel values;

means for clustering a plurality of pixel data of said standard definition digital video signal adjacent to a pixel data of ~~a second~~ <u>said high definition</u> digital video signal to produce a class<u>, a bit number of said pixel data of said standard definition digital video signal being reduced</u>;

means for retrieving said class data from one of said addresses of said memory

corresponding to said class of said standard definition digital video signal; and

means for generating all of pixel data, representing pixel values of a said high definition

digital video signal, in the same manner in accordance with a common algorithm based upon at

least said retrieved class data.

30. (Six Times Amended) A digital signal conversion method, comprising the steps of:

storing class data for respective classes at addresses in a memory corresponding to said

respective classes, said class data obtained by learning with at least a training high definition

digital video signal;

receiving a standard definition digital video signal having pixel data representing pixel

values;

clustering a plurality of pixel data of said standard definition digital video signal adjacent

to a pixel data of a second high definition digital video signal to produce a class, a bit number of

said pixel data of said standard definition digital video signal being reduced;

retrieving said stored class data from one of said addresses corresponding to said class of

said standard definition digital video signal; and

generating all of pixel data, representing pixel values of a second output said high

definition digital video signal, in the same manner in accordance with a common algorithm

based upon at least said retrieved class data.

33. (Six Times Amended) ~~Digital~~ A digital data conversion apparatus for converting a first digital image signal to a second digital image signal having a high resolution component, comprising:

a memory for storing class data for respective classes at addresses corresponding to said respective classes, said class data obtained by learning with at least a training digital image data having said high resolution component;

means for receiving said first digital image signal including pixel data representing pixel values;

means for clustering a plurality of pixel data of said first digital image signal adjacent to a plurality of pixel data of said second digital image signal to produce a class, a bit number of said pixel data of said first digital image signal being reduced and said class being used to retrieve a class data to generate a plurality of pixel data representing pixel values of ~~a~~ said second digital image signal;

means for retrieving said class data from addresses of said memory corresponding to said class of said first digital image signal; and

means for generating all of said pixel data, representing pixel values of said second digital image signal, in the same manner in accordance with a common algorithm based upon at least said retrieved class data.

36. (Six Times Amended) ~~Digital~~ A digital data conversion method for converting a first digital image signal to a second digital image signal having a high resolution component, comprising the steps of:

storing class data for respective classes at addresses in a memory corresponding to said respective classes, said class data obtained by learning with at least a training digital image data having said high resolution component;

receiving said first digital image signal including pixel data representing pixel values;

clustering a plurality of pixel data of said first digital image signal adjacent to a plurality of pixel data of said second digital image signal to produce a class, a bit number of said pixel data of said first digital image signal being reduced and said class being used to retrieve a class data to generate a plurality of pixel data representing pixel values of ~~a~~ said second digital image signal;

retrieving said class data from addresses of said memory corresponding to said class of said first digital image signal; and

generating all of said pixel data, representing pixel values of said second digital image signal, in the same manner in accordance with a common algorithm based upon said retrieved class data.